10/677,713
Martelli
GAU: 1772 (A. Chevalier)

Remarks

Preliminary Matters

Claims 1- 4, 6-10, 13, and 14-18 are pending. Claims 15-18 are new.

No additional fees are required. If determined otherwise, the Office is authorized to charge Deposit Account No. 07-1077 for the amount.

§ 103 Rejection

Claims 1- 4, 6-10, 13, and 14 were rejected applying the combination of Ota et al., of record, and Chubb et al. (U.S. Pat. No. 6,214,424) Applicant repeats the prior traversal of the rejection of Claims 5-8 using Ota et al. because Ota et al. are not using a frost colorant additive in their thermoplastic formulation. In addition to the frost colorant, Applicant states that various hues can be obtained with custom colors. Thus, it is clear from Applicant's specification that a frost colorant is not color, per se.

Ota et al. are concerned with a color of the container that has been sand-blasted. Applicant is using a commercially available chemical ingredient to generate the frosted effect within the molded thermoplastic product AND also an etched pattern to combine to form a matte finish appearance for the product.

Chubb et al. are not concerned with a frost colorant additive either.

To emphasize what a frost colorant additive is, Applicant has amended his specification to add text from U.S. Pat. No. 6,524,694 (Phillips) which had been incorporated by reference to this application. Please see Page 5, Lines 1-4 of this application.

The several paragraphs added are incorporated verbatim from Patent '694 beginning at Col. 4, Line 31 and concluding at Col. 5, Line 62.

The several paragraphs emphasize that the light-diffusing particles are added to the composition. The light-diffusing particles can be in any of several particulate forms and be made of any of a large variety of materials.

The term "frost colorant" is therefore amplified by the text incorporated by reference from Phillips '964.

Also, reference in the specification at page 4 to a "commercially available colorant to achieve this 'frosted glass' effect" can be amplified by the reproduction of the web page included with Applicant's response of February 3, 2006, which reminds those skilled in the art what is meant by a "frost colorant". Though the branding is now "OnColor FX Colorant", the undersigned can represent to the Office that the brand formerly was "Hanna FX Colorant," the commercial product identified in Applicant's specification.

Therefore, because neither Ota et al. nor Chubb et al. nor a combination of them render obvious the use of a frost colorant additive *of light-diffusing particles*, all pending Claims are patentable over Ota et al. and Chubb et al.

To further help the Office understand what a frost colorant additive *of light-diffusing particles* is, Assignee of Applicant includes two documents with this response.

The first is a commercial brochure that explains in marketing terms the value of the present invention. A "frost colorant" (a "colorless" chemical) was added to the

plastic mix that was being melted and molded into the liquor bottle. Near the end of the text is reference to the fact that the mold was finely textured. It is the combination of a chemical additive to the bulk of the plastic and the texture of the physical surface resulting from an etched mold which Applicant has invented.

The second is a MSDS (Material Safety Data Sheet) for one of the many "frost colorants" the assignee of this application markets. This OSHA-required document shows the essential chemical nature of the "frost colorant" and that barium sulfate is an active ingredient. While not limited to a particular theory, the barium sulfate in the concentrate acts to diffuse light that strikes the plastic into which the "frost colorant" concentrate is mixed. It is key to understanding by the Office that this particular "frost colorant" is "neutral", meaning that it itself does not have any color (dye or pigment-based).

The term "colorant" in association with "frost" is how at least the Assignee of Applicant approaches nomenclature. Because "frost" like "pearl" or "marble" is a special effect, it is more often grouped with "colors" than other "additives" such as anti-static ingredients, ultra-violet light stabilizers, and other ingredients that affect performance, rather than appearance.

As repeated from the webpage reproduced in the response of February 3, 2006: http://www.polyone.com/prod/trade/trade_info.asp?ID={7976FADA-8BC7-4527-A711-DB587B781D81}&link=Q

> OnColor FX Frost colorants are concentrates formulated to give a frosted-glass look to transparent and semi-transparent polymers. In transparent polymers, OnColor FX Frost gives a diffused translucence similar to frosted or etched glass. They can also be used in translucent polymers to enhance the frosted effect further.
>
> OnColor FX Frost concentrates do not alter the mold surface or the surface gloss of the part.

Phillips Patent '694, of record, also contains a paragraph, beginning at Col. 4, Line 15, that needs some explanation:

> The frosted glass effect may be a visual effect only, such as that obtained when a composition of the invention is extruded, formed, or produced in a mold having a smooth surface, to produce a smooth-surfaced translucent product. Alternatively, the effect may be both visual and tactile, such as that obtained by molding the composition of the invention in a mold having a textured surface to impart a matte finish to the translucent product. As described further below, transparent or semitransparent color concentrates, pigments or dyes may also be blended with the invention compositions to produce colored translucent products, such as a "pink frost", a "green frost", a "lavender frost" etc., in addition to a "clear" or "natural" frosted product. Suitable organic pigments, inorganic pigments and polymer-compatible dyes are known to those skilled in the art of making colored polymers.

While the second sentence does disclose the combination of visual and tactile from the composition plus use of "a mold having a textured surface...", there is nothing in Phillips Patent '694 that describes or suggests the use of an etched pattern which all of the pending claims require. More specifically, there is nothing in Phillips Patent '694 which discloses or suggests the limitations contained in dependent claims 7-10.

It is also possible that the commercial brochure is further describing the option explained in the Phillips Patent '694. If it is, then the brochure is merely cumulative to the vague statement of the Phillips Patent '694, because nothing in the brochure teaches or suggests the precision achieved by use of a mold having an etched pattern.

Conclusion

Ota et al. are not concerned with an additive that imparts a frosted look to the composition of the product. Reference to Column 2, lines 5-10 of Ota et al. confirms that Ota et al. are using a purely physical, surface-alteration means to achieve their effect

Chubb et al. are not concerned with frost effects generated by light-diffusing particles.

Phillips is not concerned with frost effects with a mold having a pattern that is etched.

Applicant combines precise etching to the physical outer surface with a chemical additive of light-diffusing particles to the bulk of the composition of the product to achieve his inventive effect.

If there are any matters that prevent a Notice of Allowance, the Examiner is invited to contact the undersigned by telephone.

Respectfully submitted by:

April 11, 2006
Date

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PET Solutions

PolyOne® and Captive Plastics Show Bacardi® There's More Than One Way to Frost a Tropico® Liqueur Bottle.

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PolyOne
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POLYONE'S HANNA FX® FROST COLORANT PROVIDED BACARDI-MARTINI U.S.A., INC., WITH A PREMIUM APPEARANCE AT AN ECONOMICAL COST.

DESIGN CHALLENGE

When Bacardi-Martini U.S.A., Inc., launched its new TROPICO® rum and citrus beverage product, they settled on a premium, sprayed-on, UV-curable matte coating to create the appearance of a frosted bottle. While Bacardi was satisfied with the aesthetically pleasing appearance of the bottles, the premium cost for the coating, as well as shipping and handling the bottles, was seriously affecting the profitability of this product.

PROCESSING CHALLENGE

Bacardi challenged Captive Plastics to find a more economical process, while retaining the high-quality look of the sprayed-on coating. With this objective, Captive Plastics, a full-service plastic packaging supplier, turned to PolyOne to help develop a frosted bottle using a colorant from PolyOne's ComPETe® product line.

POLYONE SOLUTION

PolyOne's custom formulated ComPETe® Type T color concentrate, Hanna FX® Frost, met the challenge by providing a diffused translucence to the plastic without the need for an expensive secondary process. A colorless, natural formulation was selected to add semiopacity without a tint. Because Hanna FX® Frost colorant does not significantly alter the surface gloss of the material, PolyOne proposed using the colorant in tandem with a finely textured mold surface, which provided the required nonshiny finish. The new process reduced the bottle cost by almost 40 percent, meeting Bacardi's need for a less-expensive container. PolyOne's expertise in design and engineering enabled their customer to find a complete solution to a complex molding problem.

POLYONE CORPORATION

MATERIAL SAFETY DATA SHEET

NATURAL FROST W/ UV

Version Number 1.1
Revision Date 05/29/2003

Print Date 2/2/2004

1. PRODUCT AND COMPANY IDENTIFICATION

POLYONE CORPORATION
33587 Walker Road, Avon Lake, OH 44012

NON-EMERGENCY TELEPHONE	:	Product Stewardship (770) 271-5902
Emergency telephone number	:	**CHEMTREC 1-800-424-9300 (24hrs for spill, leak, fire, exposure or accident).**
Product name	:	NATURAL FROST W/ UV
Product code	:	CC10004986
Chemical Name	:	Mixture
CAS-No.	:	Mixture
Product Use	:	Industrial Applications

2. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

Components	CAS-No.	Weight %
Barium sulfate	7727-43-7	10 - 30

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

This mixture has not been evaluated as a whole. Information provided on the health effects of this product is based on individual components. All ingredients are bound and potential for hazardous exposure as shipped is minimal. However, some vapors may be released upon heating and the end-user (fabricator) must take the necessary precautions (mechanical ventilation, respiratory protection, etc.) to protect employees from exposure.

POTENTIAL HEALTH EFFECTS

Routes of Exposure: : Inhalation, Ingestion, Skin contact

Acute exposure

Inhalation	:	Resin particles, like other inert materials, can be mechanically irritating.
Ingestion	:	May be harmful if swallowed.
Eyes	:	Resin particles, like other inert materials, are mechanically irritating to eyes.
Skin	:	Experience shows no unusual dermatitis hazard from routine handling.

Chronic exposure : Refer to Section 11 for Toxicological Information.

Medical Conditions Aggravated by Exposure:	:	None known.

4. FIRST AID MEASURES

Inhalation	:	Move to fresh air in case of accidental inhalation of fumes from overheating or combustion. When symptoms persist or in all cases of doubt seek medical advice.
Ingestion	:	Do not induce vomiting without medical advice. When symptoms persist or in all cases of doubt seek medical advice.
Eyes	:	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists, seek medical attention.
Skin	:	Wash off with soap and plenty of water. If skin irritation persists seek medical attention.

5. FIRE-FIGHTING MEASURES

Flash point	:	Not applicable
Flammable Limits		
Upper explosion limit	:	Not applicable
Lower explosion limit	:	Not applicable
Autoignition temperature	:	Not relevant
Suitable extinguishing media	:	Carbon dioxide blanket, Water spray, dry powder, foam.
Special Fire Fighting Procedures	:	Fullface self-contained breathing apparatus (SCBA) used in positive pressure mode should be worn to prevent inhalation of airborne contaminants.
Unusual Fire/Explosion Hazards	:	None

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	:	Wear appropriate personal protection during cleanup, such as impervious gloves, boots and coveralls.
Environmental precautions	:	Should not be released into the environment. The product should not be allowed to enter drains, water courses or the soil.
Methods for cleaning up	:	Clean up promptly by sweeping or vacuum. Package all material in plastic, cardboard or metal containers for disposal. Refer to Section 13 of this MSDS for proper disposal methods.

7. HANDLING AND STORAGE

Handling	:	Take measures to prevent the build up of electrostatic charge. Heat only in areas with appropriate exhaust ventilation.

Storage : Keep containers dry and tightly closed to avoid moisture absorption and contamination. Keep in a dry, cool place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Respiratory protection : No personal respiratory protective equipment normally required.

Eye/Face Protection : Safety glasses with side-shields.

Hand protection : Protective gloves.

Skin and body protection : Long sleeved clothing.

Additional Protective Measures : Safety shoes.

General Hygiene Considerations : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Engineering measures : Heat only in areas with appropriate exhaust ventilation. Provide appropriate exhaust ventilation at machinery.

Exposure limit(s)

Components	Value	Exposure time	Exposure type	List:
Barium sulfate	10 mg/m3	Time Weighted Average (TWA):	Total dust.	ACGIH
Barium sulfate	5 mg/m3	PEL:	Respirable fraction.	OSHA Z1
	15 mg/m3	PEL:	Total dust.	OSHA Z1

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	: Solid	Evaporation rate	: Not applicable.
Appearance	: Pellets	Specific Gravity	: Not determined
Color	: NOT APPLICABLE	Bulk density	: Not established
Odor	: Very faint	Vapor pressure	: Not applicable
Melting point/range	: Not determined	Vapor density	: Not applicable
Boiling Point:	: Not applicable	pH	: Not applicable
Water solubility	: Insoluble		

10. STABILITY AND REACTIVITY

Stability : Stable.

Hazardous Polymerization : Will not occur.

Conditions to avoid : Keep away from oxidizing agents and open flame. To avoid thermal decomposition, do not overheat.

Incompatible Materials	:	Incompatible with strong acids and oxidizing agents.
Hazardous decomposition products	:	Carbon dioxide (CO2), carbon monoxide (CO), oxides of nitrogen (NOx), other hazardous materials, and smoke are all possible.

11. TOXICOLOGICAL INFORMATION

This mixture has not been evaluated as a whole for health effects. Exposure effects listed are based on existing health data for the individual components which comprise the mixture.

Toxicity Overview
This product contains the following components which in their pure form have the following characteristics:

CAS-No.	Chemical Name	Effect	Target Organ
7727-43-7	Barium sulfate	Irritant	Respiratory system.
		Systemic effects	Eyes, Respiratory system.

12. ECOLOGICAL INFORMATION

Persistence and degradability	:	Not readily biodegradable.
Environmental Toxicity	:	Chemicals are not readily available as they are bound within the matrix of the polymer.
Bioaccumulation Potential	:	Chemicals are not readily available as they are bound within the matrix of the polymer.
Additional advice	:	No data available.

13. DISPOSAL CONSIDERATIONS

Product	:	Like most thermoplastics the product can be recycled. Where possible, recycling is preferred to disposal or incineration. The generator of waste material has the responsibility for proper waste classification, transportation and disposal in accordance with applicable federal, state/provincial and local regulations.
Contaminated packaging	:	Recycling is preferred when possible. The generator of waste material has the responsibility for proper waste classification, transportation and disposal in accordance with applicable federal, state/provincial and local regulations.

14. TRANSPORT INFORMATION

U.S. DOT Classification	:	Refer to specific regulation.
ICAO/IATA	:	Refer to specific regulation.

IMO / IMDG	:	Refer to specific regulation.

15. REGULATORY INFORMATION

US Regulations:

OSHA Status	:	Classified as hazardous based on components.
TSCA Status	:	All components of this product are listed on or exempt from the TSCA Inventory.

US. EPA CERCLA Hazardous Substances (40 CFR 302)

Not applicable

California Proposition 65	:	This product does not contain a substance listed by California Prop 65.

SARA Title III Section 302 Extremely Hazardous Substance

Not applicable

SARA Title III Section 313 Toxic Chemicals:

Not applicable

Canadian Regulations:

WHMIS Classification	:	Not controlled.
DSL	:	All components of this product are on the Canadian Domestic Substances List (DSL) or are exempt.

National Inventories:

Australia AICS	:	Not determined.
China IECS	:	Not determined.
Europe EINECS	:	Not determined.
Japan ENCS	:	Not determined.
Korea KECI	:	Listed.
Philippines PICCS	:	Not determined.

POLYONE CORPORATION

MATERIAL SAFETY DATA SHEET

NATURAL FROST W/ UV

16. OTHER INFORMATION

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.